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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,552	08/23/2006	Yoshitaka Ito	10873.1940USWO	6707
53148 7590 04/01/2009 HAMRE, SCHUMANN, MUELLER & LARSON P.C. P.O. BOX 2902-0902 MINNEAPOLIS, MN 55402				
EXAMINER				
BHAT, NARAYAN KAMESHWAR				
ART UNIT		PAPER NUMBER		
1634				
MAIL DATE		DELIVERY MODE		
04/01/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/590,552

Applicant(s)

ITO ET AL.

Examiner

NARAYAN K. BHAT

Art Unit

1634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 56-73 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 56-73 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/55/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 56-60 are drawn to a method of judging a biological activity in an environment contaminated with an organochlorine compound.

Group II, claims 61-62 are drawn to a bioremediation method for an environment contaminated with an organochlorine compound.

Group III, claims 63-68 are drawn to a microarray device for detecting bacteria having biological activity in an environment contaminated with an organochlorine compound.

Group IV, claims 69-73 are drawn to a kit for detecting bacteria having biological activity in an environment contaminated with an organochlorine compound.

The inventions listed as Groups I to IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons.

The claim 56 of group I is drawn to a method for judging the biological activity of bacteria capable of degrading organochlorine compound comprising amplifying the nucleic acid extracted from an environmental sample and hybridizing to the probes specific to 17 types of bacteria and detecting at least one of 17 types of bacteria. Claims

61 and 62 of group II are drawn to bioremediation method comprising stimulating the growth and /or activity of the bacterium and adding another bacterium to enhance the degradation of organochlorine compound. Claims 63 and 66 of group III are drawn to microarray device comprising a substrate on which at least one probes is immobilized to detect bacteria associated with degradation of organochlorine compound. Claim 69 of group IV is drawn to a kit comprising a probe, a primer and reagents for gene amplification for the target preparation to detect bacteria associated with degradation of organochlorine compound.

The common technical feature as defined by group III, linking groups I –IV is a microarray device comprising a substrate on which at least one probes is immobilized to detect bacteria associated with degradation of organochlorine compound. However, the structural features of the microarray device recited in claims 63 and 66 are taught by Deneff et al (Environmental Microbiology, 2003, 5, 933-943).

Deneff et al teaches an oligonucleotide microarray device comprising a substrate (pg. 939, see substrates and array-printing section) upon which probes for organochlorine compound degrading genes including *Rhodococcus* bacteria are immobilized (pg. 939, experimental procedures section) for simultaneous monitoring of microorganisms in the environment including bacteria associated with degradation of organochlorine compound, i.e., PCB (Abstract, Fig. 6). It is also noted that the *Rhodococcus* is the preferred bacteria associated with the degradation of organochlorine compound of the instant claim 56.

Since Denef et al teaches the recited structural features of the microarray device of the instant invention, the technical feature linking groups I to IV does not constitute a special technical feature as defined by PCT Rule 13.2, because it does not define a contribution over the prior art. Thus, there is no special technical feature linking the recited groups, as would be necessary to fulfill the requirements for unity of invention.

Further Lack of Unity Requirement

The claims of Invention I, III and IV encompass a multitude of distinct nucleic acid probe sequences as well as all possible combinations thereof. Specifically the claims encompass one or more nucleic acid probes selected from the group consisting of SEQ ID NOS 19-105. The 87 different nucleic acid probe sequences encompassed by the claims, and the various combinations thereof also encompassed by the claims, differ in sequence and structure from one another, and possess different functional properties and characteristics. In the instant case, the description fails to disclose that each of the nucleic acid probes share a common property or activity. Moreover, since each nucleic acid probe consists of a specific nucleotide sequence they fail to share a common structure. Since neither of these two requirements is met, the group of nucleic acid probes claimed does not meet the requirement of unity of invention. Therefore Applicants must further elect a single nucleic acid probe or a single combination of nucleic acid probes to be examined. Please identify a single nucleic acid probe or a single combination of sequences selected by SEQ ID NOS.

Notice of Possible Rejoinder

The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.** Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Applicant is advised that the reply to this requirement to be complete must include an election of invention to be examined even though the requirement is traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Narayan K. Bhat whose telephone number is (571)-272-5540. The examiner can normally be reached on 8.30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram R. Shukla can be reached on (571)-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Narayan K. Bhat/

Examiner, Art Unit 1634

/Ram R. Shukla/

Supervisory Patent Examiner, Art Unit 1634